



Zen Networks



5G Cloud-based NWDAF on AWS

ABOUT THE ORGANIZATION

The leader in the Internet of Things market.

SUMMARY

Amazon ES, is a fully managed service that makes it easy for you to deploy, secure, and operate Elasticsearch in AWS at scale.

It is a widely popular service and different customers integrate it in their applications for different search use cases.

Zen Networks developed a big data analysis platform for mobile networks. The platform takes root in 5G releases 15+ for Network Data Analysis Function (NWDAF) as well as general 5G guidelines for Cloud -native and Service Based Architectures. As network automation becomes more and more present, NWDAF plays a central role in mobile networks in order to provide data-driven optimizations.

CHALLENGES

- Bridging cloud and big data technologies with mobile networks expertise;
- Provide full 360-degree visibility to mobile networks with open technologies, leveraged to build observability solutions as well as value-added services on top;
- Bridge these technologies with our SIM Over-The-Air server and other steering services to build new capabilities and optimize OPEX.

SOLUTIONS

The telecommunications Industry using AWS:

- ✓ 5G NWDAF Solution : NWDAF consumes data from different NF and AF sources to analyse it then provide it to AF, 5GC NF and OAM. The NWDAF answers use cases in different domains such as QoS, steering, security and dimensioning. At the same time, the ingested data mixes between a wide range of sources. Using AWS managed services, we were able to spin up an NWDAF bringing high value to the CSP. Below is a simplified architecture of the build;
- ✓ Telco-centric data analysis: Using this method, we build a highly reliable and fast data platform that can be used for real-time analysis, some of the key use cases: Troubleshooting and support, Network Operations Center and monitoring, Market analysis and Security and signalling optimization;
- ✓ Data-aware real-time services: AWS MSK service is key to build real-time services. In fact, by combining it with AWS serverless technologies like Lambda or Fargate, network automation becomes a quickly grasped reality. In fact, network steering and automated provisioning decisions can be automatically taken by ingesting network events in real-time and building AI-based or explicitly defined rules;
- ✓ NFV : Using AWS serverless technologies, we build highly reliable telecom workloads and have them scale on-demand using AWS auto-scaling mechanisms. In fact, at Zen Networks, we have found AWS cloud offering to be very compatible with the current 5G Service Based Architecture trends

The platform also helped us answer key use cases and while new opportunities show up to leverage it better, we already prepare for the next steps using it. Some on them are:

- ✓ Leveraging AI/ML capabilities for better aberrant behaviour detection. For this, we are benchmarking AWS EMR (SparkML) and AWS Sagemaker;
- ✓ Add newer integrations towards NFV for enhanced automation.

BENEFITS

Amazon ES's benefits:

- ✓ Fully managed : Launch production-ready clusters in minutes. No more patching, versioning, and backups;
- ✓ Access to all data : Capture, retain, correlate, and analyse your data all in one place;
- ✓ Scalable : Resize your cluster with a few clicks or a single API call;
- ✓ Secure : Deploy into your VPC and restrict access using security groups and AWS Identity and Access Management (IAM) policies.;
- ✓ Highly available : Replicate across Availability Zones, with monitoring and automated self-healing;
- ✓ Cost-effective : Deploy automatically Elasticsearch without need for a team to manage it and resize it on demand as per your usage.

WHY ZEN NETWORKS?

We've taken our significant experience with the Telecommunication Industry and applied it to our consumer's needs. Zen Networks has a long track record of success, demonstrating that we match our customers' requirement and build future solutions based on developing trends.